

IEEE 802.11n Wireless Series

Wireless Access Point



User Manual

FCC Certifications



Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Mark Warning



This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 Class A for ITE, the essential protection requirement of Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility and R&TTE Directive 1999/5/EC to meet the regulation of the radio equipment and telecommunications terminal equipment.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

Trademarks:

All trade names and trademarks are the properties of their respective companies.

Copyright © 2010, All Rights Reserved.

Contents

Unpacking Information	4
Chapter 1 Introduction to Wireless Access Point	5
1.1 General Description	5
1.2 Key Features	5
1.3 The Front Panel	6
1.4 The Rear Panel	7
1.5 Placement (Optional)	7
Chapter 2 Installing and Using Wireless Access Point	9
2.1 Connecting this AP to your network	9
2.2 Configuring the IP address of your computer	10
Chapter 3 Management	13
3.1 Starting the WEB-Based Management Interface	13
3.2 The Graphic User Interface	13
3.3 Wireless	15
3.3.1 Basic Settings	15
3.3.2 Advanced Settings	18
3.3.3 Security	19
3.3.4 Access Control	23
3.3.5 WDS Settings	24
3.3.6 Site Survey	24
3.3.7 WPS Settings	25
3.4 TCP/IP Setting	26
3.5 Statistics	27
3.6 System Log	28
3.7 Upgrade Firmware	29
3.8 Save/Reload Setting	29
3.9 Password	30
3.10 System Time Setting	30
Appendix A: Product Specifications	31

Unpacking Information

Thank you for purchasing the product. Before you start, please check all the contents of this package.

The product package should include the following:

1. One Wireless Access Point with one antenna
2. One Power Adapter
3. Four Rubber Feet
4. One Quick installation Guide
5. One resource CD, including User's Manual

Note:

Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your distributor.

Conventions

The AP mentioned in this guide stands for IEEE 802.11n Wireless Access Point without any explanation.

Chapter 1 Introduction to Wireless Access Point

1.1 General Description

Easily constructing your LAN, this wireless access point offers a wireless interface and eliminates your effort busying cabling from one computer to another.

With being compliant to IEEE 802.11n specification, this wireless access point supports data rate up to 300 Mbps and hence help to construct your high-speed home or office wireless network. The IEEE 802.11n Wireless Access Point provides a better wireless signal for network than existing wireless 802.11g technology. It complies with IEEE 802.11n draft 2.0 and IEEE 802.11b/g wireless standards.

This access point equips two LAN ports, and two embedding antennas. As for security, it also supports the latest wireless security features to help prevent unauthorized access, be it from over a wireless network or from the Internet. Moreover, supporting for WPA and WPA2 standards ensure that you will be able to use the best possible encryption, regardless of your client devices.

Additionally, this device supports WEB-based graphics user interface that helps users to configure this device easily.

1.2 Key Features

- Complies with IEEE 802.11n wireless standards
- Provides two 802.11b/g/n wireless fixed antenna
- High speed transfer data rate up to 300 Mbps
- Supports 2.4 GHz frequency band
- Supports wireless data encryption with WPA, WPA2, Open/ shared key, and pair-wise key authentication services
- Supports authentication for wireless connectivity based on ESSID
- Support MDI/MDIX auto crossover function
- Supports firmware upgrade function via Web

1.3 The Front Panel

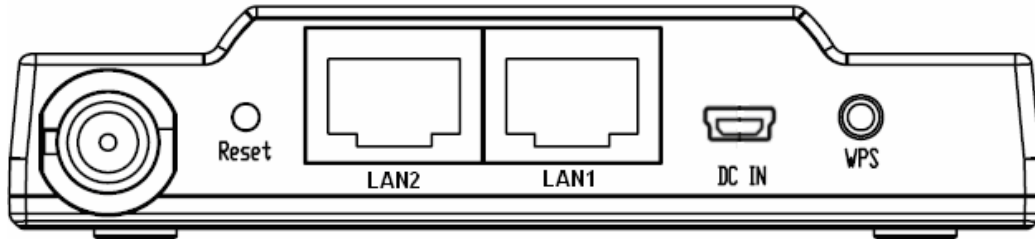
The front panel of the Wireless 11n Access Point:



Name	Status	Indication
Status	Green	Power On
	Dark	Power Off
	System Resetting default	Blink Green a few times
WPS	Blink Green one time	System Reboot
	Blink Green	WPS Connecting
	Dark	System Stability
WLAN	Off	The wireless function is disabled
	Flashing	The wireless function is enabled
	Flashing fast	Sending or receiving data over wireless
LAN 1-2	Off	There is no device linked to the corresponding port or the connection is dropping off.
	On	There are devices linked to the corresponding ports but no data transmitted or received.
	Flashing	Sending or receiving data over corresponding port

1.4 The Rear Panel

The rear panel of the Wireless 11n Access Point is shown below.



- **LAN(1~2):** Through these ports, you can connect the AP to your PCs and the other Ethernet network devices.
- **DC IN:** Plug the circle end of the power adapter firmly into the rear panel of the Wireless AP, and the other end put into an electric service outlet then the system is ready.
- **Reset Button**

Push the button for more than 5 seconds and then release it, the system will return to factory default setting. In the meantime, system rewrites flash to default value and SYS LED flash for a while. Approximately 60 seconds later, the SYS LED turn dark, now the whole system parameters have returned to factory default value. If the process has been interrupted by any reason (power off), the system will fail. Before performing the process, ensure a safe operating environment please!
- **Antenna:** Used for enhancing the wireless signal, and expanding the range of signal.
- **WPS:** Help users to connect this AP quickly and security. It uses PIN configuration method or PBC configuration method, in which users can easy setup WPS connection. Please refer to [WPS settings](#) for more information.

Warning : Incomplete factory setting recovery procedure will cause the Wireless AP malfunction ! If you are unfortunately in this situation, do not try to repair it by yourself. Consult your local distributor for help!

1.5 Placement (Optional)

There are two ways to place the AP. The first way is to place the AP vertically on a surface. The

second way is to attach it to the wall. If you select a wall-mount option, please follow the steps below:

1. Select a location with access for cables and a power outlet.
2. Unplug the unit. Place it upside down on a flat surface and mark the two holes for anchors.
3. Installing the wall mount anchor (not supplied) into the wall with tools such as drill or hammer.
4. Insert the screws (not supplied) in each hole of the stand parts.
5. Attaches the unit to the anchors on the wall.

Chapter 2 Installing and Using Wireless Access Point

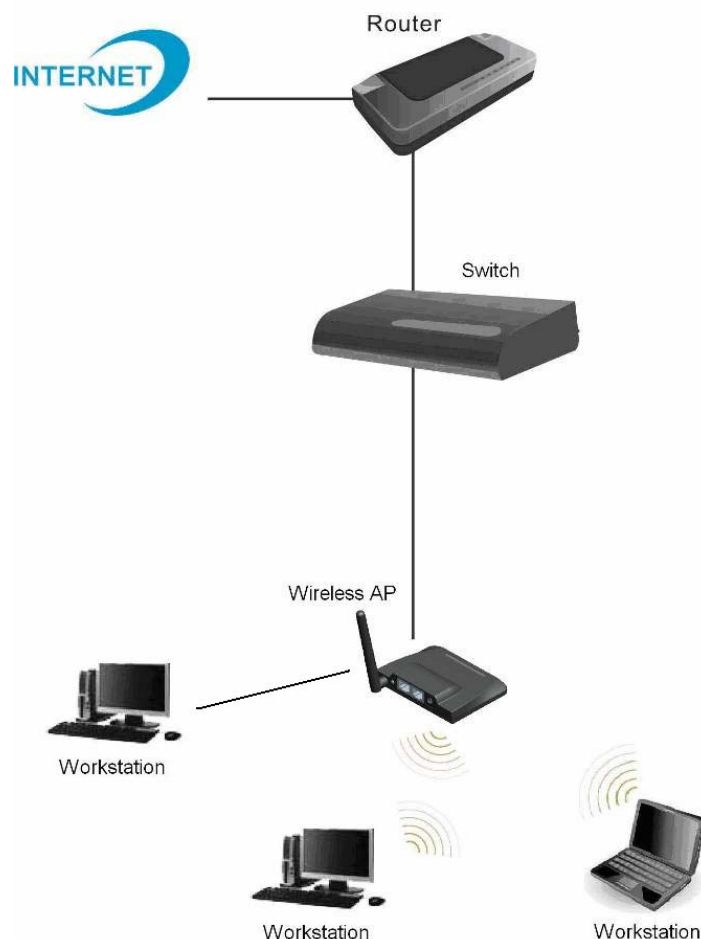
This chapter provides a step-by-step guide to the installation and configuration of the Wireless AP. We suggest you go over the whole chapter and then do more advanced operation.

2.1 Connecting this AP to your network

This Chapter provides a step-by-step guide to the installation and configuration of this wireless access point.

- Connect the power adapter with the connector end to the power connector in the rear panel of the device and the plug end to an appropriate outlet.
- Connect the LAN port with RJ-45 cable to:
 1. A broad band router to allow wireless clients to connect to WAN.
 2. A switch to allow wireless clients to communicate with wired LAN.
 3. A computer directly to use the computer configuring this AP.

Note: You have to configure the network settings of this AP to be communicable with your router, switch or computer first. To change the default network settings of the AP, please refer to “**LAN Interface setup**”.



2.2 Configuring the IP address of your computer

In order to communicate with this Wireless AP, you have to configure the IP addresses of your computer to make it compatible with the device.

1. The default network setting of the device:

IP address: 192.168.1.254

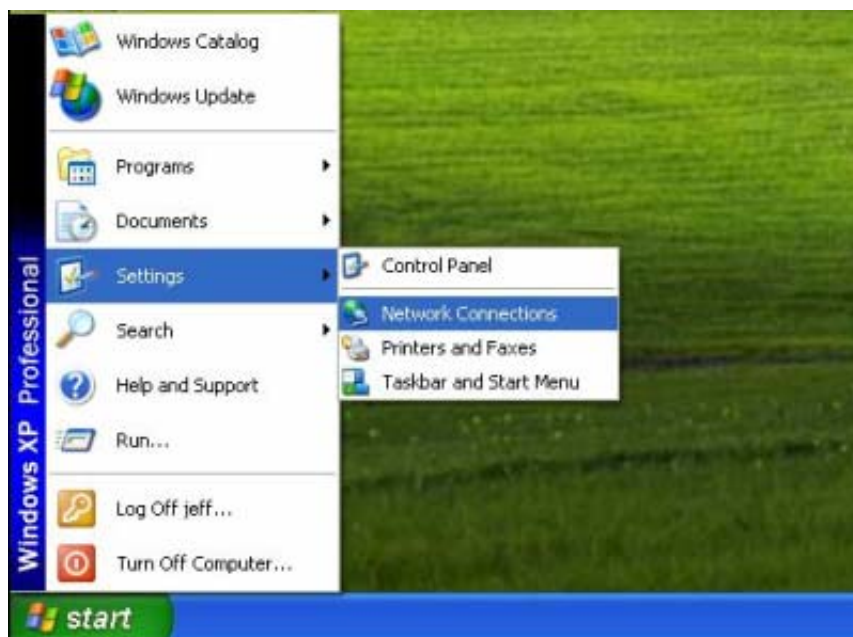
Subnet Mask: 255.255.255.0

Note: if you connect this AP to your PC with wireless mode firstly, the default security mode is “WPA2”, and the default password is 123456780ab, after that you can also modify the default password when you log in, or select other security mode.

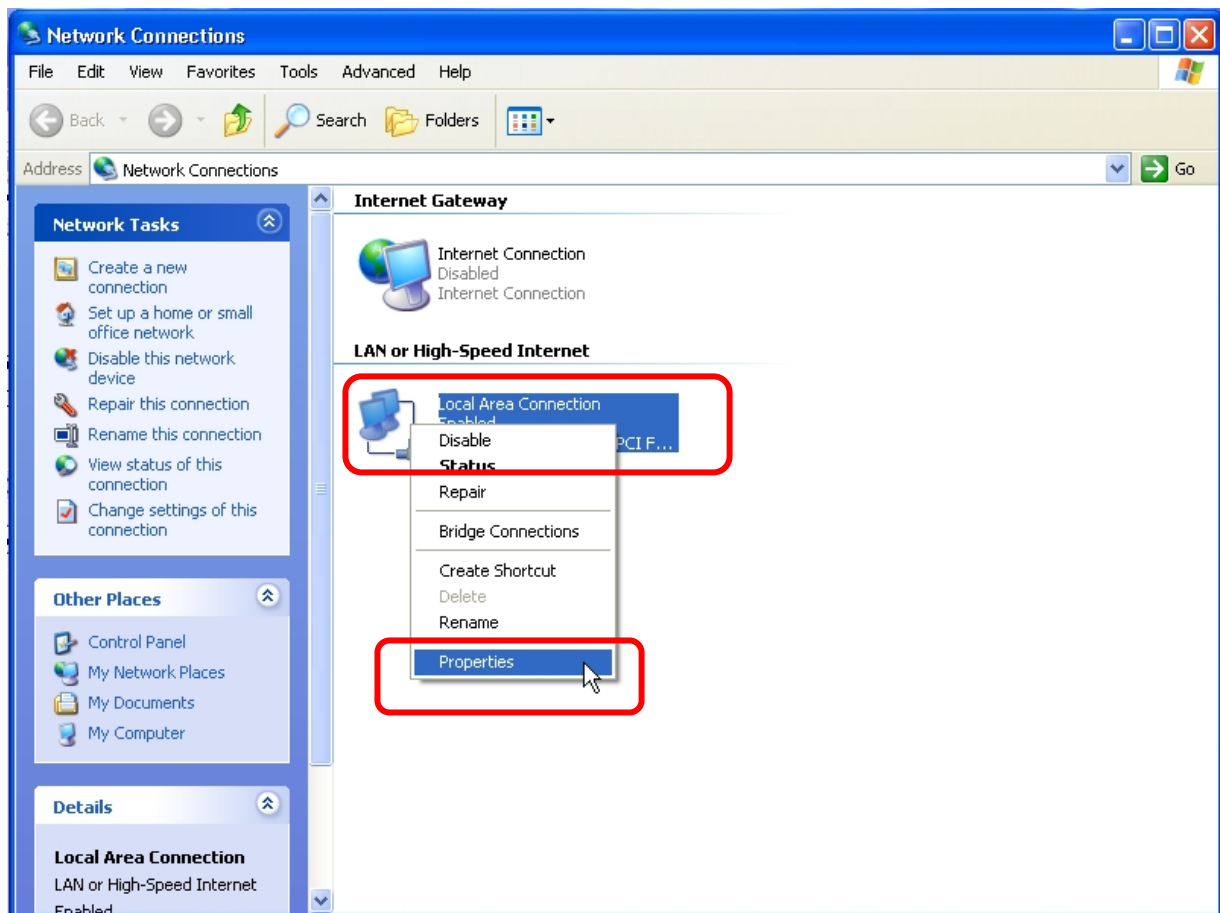
2. In the following TCP/IP configuration guide, the IP address “192.168.0.42” is assumed to be your IP address if you want to specify IP addresses manually. Please **DO NOT** choose “192.168.1.254” as the IP address. For the IP address “192.168.1.254” has been set as the default IP for this device.
3. The following TCP/IP configuration guide uses windows XP as the presumed operation system.

Procedures to configure IP addresses for your computer

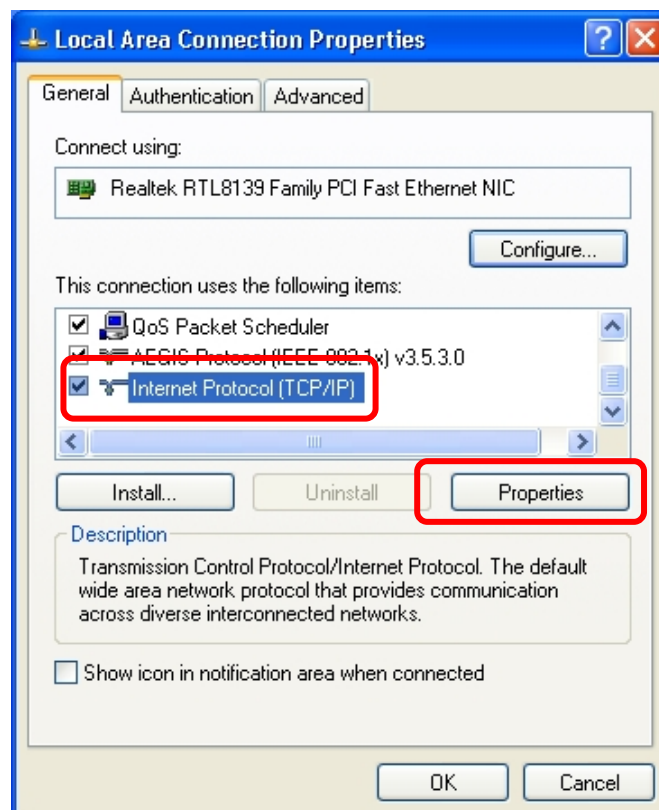
1. If you are in Classic Start menu view, click **Start > Settings > Network Connections**.
If you are in Start menu view, click **Start > Control Panel > Network Connections**.



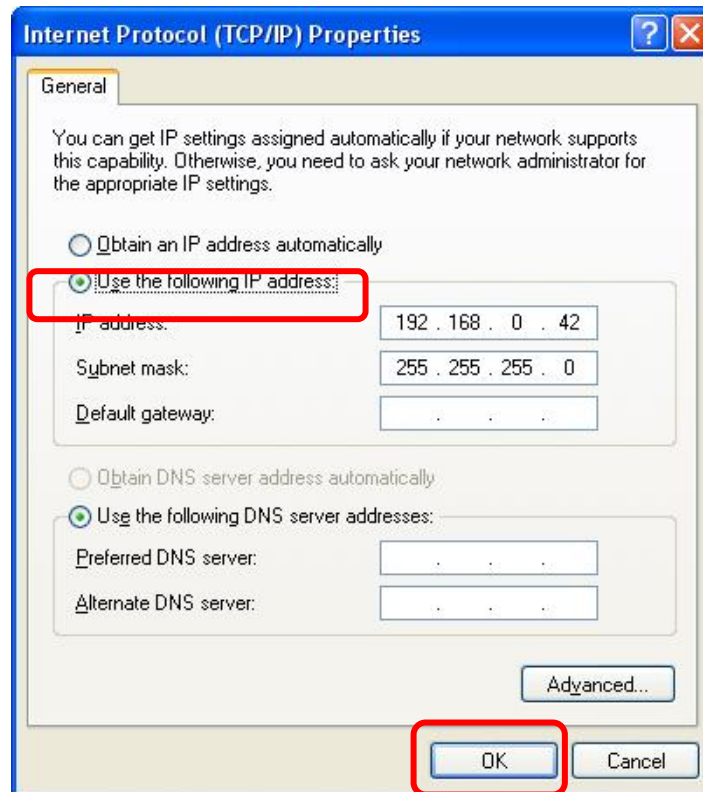
2. Right-click on **Local Area Connection** item and click on **Properties**.



3. Choose **Internet Protocol (TCP/IP)** and click **Properties**.



4. You can't choose "Obtain an IP address automatically" to get IP address automatically in this configuration. Choose "Use the following IP address" to specify IP addresses manually. Please click the **OK** button after your configuration.



Chapter 3 Management

3.1 Starting the WEB-Based Management Interface

The device uses WEB as the management interface. You can use a browser to access the management interface easily. Please follow the steps listed below.

1. Open the Internet WEB browser.
2. Type **192.168.1.254** into the URL WEB address location and press Enter.
3. The window will login automatically without User Name and Password (default).

3.2 The Graphic User Interface

After the password authorization, the information page shows up as the home page of the Graphic User interface. You may click on each folder on left column of each page to get access to each configuration page. Please note that you should click the Save Settings button to apply your configuration to this device. You can also restore the default settings by clicking the Reset Settings button. The Graphic User Interface as follows:

System	
Uptime	0day:0h:7m:48s
Firmware Version	v1.4
Build Time	Fri Mar 26 09:38:44 CST 2010
Wireless Configuration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	RTK_11n_AP
Channel Number	11
Encryption	Disabled
BSSID	00:e0:4c:81:96:b1
Associated Clients	1
TCP/IP Configuration	
Attain IP Protocol	Fixed IP
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
MAC Address	00:e0:4c:81:96:b1

Wireless 11n Access Point

Items	Information
Uptime	The period that you turn the device on.
Firmware version	The current firmware version of the device.
Build Time	The build time of the device originally.
Mode	Shows if the device is operating in AP or WDS mode.
Band	The band that the wireless AP operating.
SSID	The name of this wireless network.
Channel Number	The channel that the wireless network using.
Encryption	The security encryption type that the wireless network using.
BSSID	The Basic Service Set Identity of this AP(This parameter is the same as the MAC address of LAN port)
Associated Clients	The number of members who is currently connected with this AP.
Attain IP Protocol	The way for this AP to get a IP address.
IP Address	The current IP address of this AP.
Subnet Mask	The current subnet mask of this AP.
Default Gateway	The current default gateway of this AP.
MAC Address	The current MAC address of this AP.

Wireless

3.2.1 Basic Settings

This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters. You can set up the configuration of your Wireless basic settings and monitor the Wireless Clients associate with your router.

- Status
- Wireless**
 - Basic Settings
 - Advanced Settings
 - Security
 - Access Control
 - WDS settings
 - Site Survey
 - WPS
 - Schedule
- TCP/IP Settings
- Log
- Statistics
- Upgrade Firmware
- Save/Reload Settings
- Password
- System Time

☐ **Disable Wireless LAN Interface**

Band: 2.4 GHz (B+G+N) ▼

Mode: AP ▼ Multiple AP

Network Type: Infrastructure ▼

SSID: RTK 11n AP

Channel Width: 40MHz ▼

Control Sideband: Upper ▼

Channel Number: 11 ▼

Broadcast SSID: Enabled ▼

WMM: Enabled ▼

Data Rate: Auto ▼

Associated Clients: Show Active Clients

☐ **Enable Mac Clone (Single Ethernet Client)**

☐ **Enable Universal Repeater Mode (Acting as AP and client simultaneously)**

SSID of Extended Interface:

Apply Changes
Reset

Items	Information
Disable Wireless LAN Interface	Mark the checkbox to disable interface of Wireless LAN
Band	To select a band for this device to match 802.11b, 802.11g, 802.11n, 802.11b/g, 802.11g/n or 802.11b/g/n. optional parameters: 2.4GHz(B),2.4GHz(G),2.4GHz(N),2.4GHz(B+G),2.4GHz(G+N), 2.4GHz(B+G+N)
Mode	Configure this device as AP, Client, WDS or AP+WDS , AP+MESH,MESH. If you set this device as AP or AP+WDS mode, the Multiple AP button is available for you to set up four SSID for this wireless network. Click on this button to do more configurations.

Wireless 11n Access Point

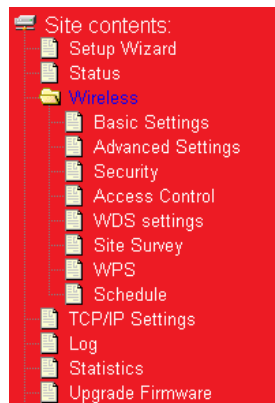
Network Type	When you configure this device in Client mode, this drop-down list allows users to change the network type into infrastructure mode or ad-hoc mode. Ad-Hoc mode: connects two computers directly without the use of a router or AP. It is also known as a peer-to-peer network. Infrastructure Mode: the wireless network contains at least one wireless client and one wireless AP or router. This client connects to Internet or intranet by communicating with this wireless AP.
SSID	Service set identifier (SSID) for the name of the wireless network.
Channel Width	Select to use 20MHz or 40MHz as the wireless channel frequency.
Control Sideband	If you have selected the channel width of 40MHz for this AP, you can control this AP to use the frequency for a deflection of "Upper" or "Lower."
Channel Number	Select a channel for the wireless network of this device.
Broadcast SSID	If you enable "Broadcast SSID", every wireless station located within the coverage of this wireless AP can discover this wireless AP easily. If you are building a public wireless network, enabling this feature is recommended. Disabling "Broadcast SSID" can provide better security.
WMM	This will enhance the data transfer performance of multimedia contents when they're being transferred over wireless network. WMM is not available in 11n mode.
Data Rate	The transmit limitation of data packets of this wireless AP. The wireless AP will use the highest possible selected transmission rate to transmit the data packets.
Associated Client	Click " Show Active Clients " button, then an "Active Wireless Client Table" pops up. You can see the status of all active wireless stations that are connecting to the access point.
Enable MAC clone	Mark the checkbox to clone the MAC address of the device. This function is only available when you set this AP as Client mode. You can also manually set the MAC address in LAN setting.
Enable Universal Repeater Mode	Mark this checkbox to enable Universal Repeater Mode which acts this device as an AP and client simultaneously.
SSID of Extended Interface	While you enable the Universal Repeater Mode, you have to specify an SSID for the extended interface.

* Please click on the **Apply Changes** button or the **Reset** button at the bottom to save/reset the configurations.

1. Multiple APs

This is the window that pops up after clicking the **Multiple AP** button.

Select one of the AP, and then click the button “Show”, “Active Wireless Client Table” window pops up.



Multiple APs

This page shows and updates the wireless setting for multiple APs.

No.	Enable	Band	SSID	Data Rate	Broadcast SSID	WMM	Active Client List
AP1	☐	2.4 GHz (B+G+N)	RTK 11n AP V	Auto	Enabled	Enabled	Show
AP2	☐	2.4 GHz (B+G+N)	RTK 11n AP V	Auto	Enabled	Enabled	Show
AP3	☐	2.4 GHz (B+G+N)	RTK 11n AP V	Auto	Enabled	Enabled	Show
AP4	☐	2.4 GHz (B+G+N)	RTK 11n AP V	Auto	Enabled	Enabled	Show

Apply Changes

Reset

2. Active Wireless Client Table

This is the window that pops up after clicking the **Show Active Clients** button.

Active Wireless Client Table

This table shows the MAC address, transmission, reception packet counters and encrypted status for each associated wireless client.

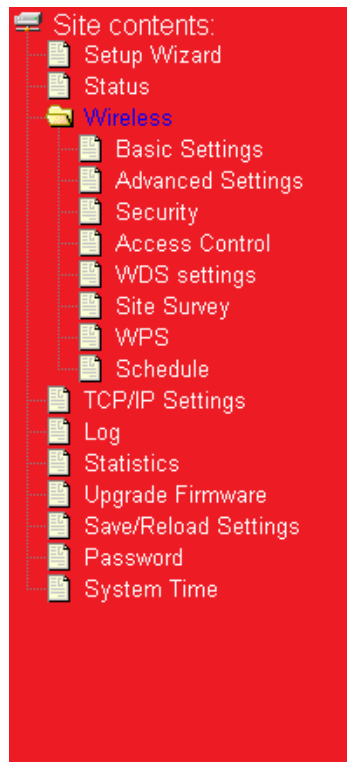
MAC Address	Mode	Tx Packet	Rx Packet	Tx Rate (Mbps)	Power Saving	Expired Time (s)
00:00:00:00:00:02	11n	14	1	150	no	297

Refresh

Close

3.2.2 Advanced Settings

You can set advanced wireless LAN parameters of this AP. We recommend not changing these parameters unless you know what changes will be on this AP.



Wireless Advanced Settings

These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point.

Fragment Threshold: (256-2346)

RTS Threshold: (0-2347)

Beacon Interval: (20-1024 ms)

Preamble Type: ☒ Long Preamble ☐ Short Preamble

IAPP: ☒ Enabled ☐ Disabled

Protection: ☐ Enabled ☒ Disabled

Aggregation: ☒ Enabled ☐ Disabled

Short GI: ☒ Enabled ☐ Disabled

WLAN Partition: ☐ Enabled ☒ Disabled

RF Output Power: ☒ 100% ☐ 70% ☐ 50% ☐ 35% ☐ 15%

Items	Information
Fragment Threshold	This value should remain at its default setting of 2346. If you experience a high packet error rate, you may slightly increase your fragmentation threshold within the value range of 256 to 2346. Setting the fragmentation threshold too low may result in poor performance.
RTS Threshold	Request To Send threshold. This value should remain at its default setting of 2347. If you encounter inconsistent data flow, only minor modifications to the value range between 0 and 2347 are recommended.
Beacon Interval	Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. Default (100ms) is recommended.
Preamble Type	The length of CRC blocks in the frames during the wireless communication.
IAPP	To enables multiple AP to communicate and pass information regarding the location of associated Stations.
Protection	Some 802.11g wireless adapters support 802.11g protections, which allows the adapter search for 802.11b/g singles only. Select "Enabled" to support protection or select "Disabled" to disable this function.

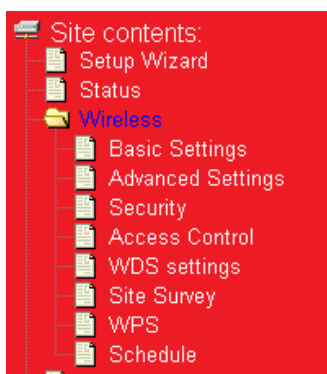
Aggregation	To aggregate lots of packets into a big one before transmitting packets. This can reduce control packet overhead.
Short GI	Indicates that the 802.11g network is using a short slot time because there are no legacy (802.11b) stations present
RF Output Power	Select the signal strength for the wireless network.

* Please click on the **Apply Changes** button or the **Reset** button at the bottom to save/reset the configurations.

3.2.3 Security

The Security function protects your wireless network from invasion. When you connect it to your PC at the first time, the default configuration is WPA2, and the default password is 1234567890ab. After you log in, you can modify it. We provide WEP and WPA encryption to secure your wireless network. Please select Disable, WEP, WPA, WPA2, and WPA-Mixed in the drop list. If you select none, any data will be transmitted without encryption and any station can access the AP.

Items	Information
Select SSID	Please choose a SSID you have set for this AP in the Wireless > Basic Settings from the drop-down list. The SSID will be shown on the wireless network for recognizing.
Encryption	There are 5 modes for you to select: Disable, WEP, WPA, WPA2, and WPA-Mixed. Please refer to the following description.
802.1x Authentication	Users that do not use this function or connecting to an open-wireless network please skip this part. Please configure the settings in accordance with the Certificated Server.



Wireless Security Setup

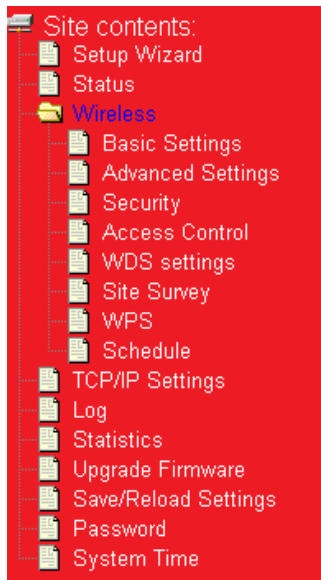
This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Select SSID:

Encryption:

802.1x Authentication: ☐

1. Security Mode -- WEP



Wireless Security Setup

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Select SSID: Root AP - RTK 11n AP Apply Changes Reset

Encryption: WEP

802.1x Authentication: ☐

Authentication: ☐ Open System ☐ Shared Key ☒ Auto

Key Length: 64-bit

Key Format: Hex (10 characters)

Encryption Key: *****

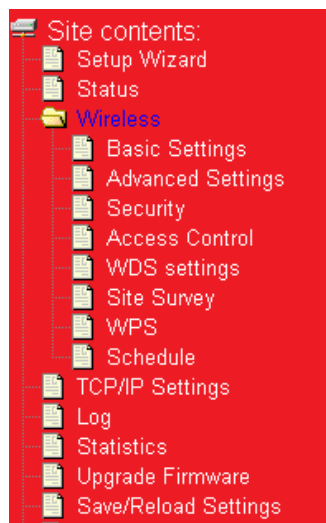
Items	Information
Encryption	Select a security encryption mode for this AP.
Authentication	There provide three options for selecting: Open System, Shared Key, Auto
Key Length	Select 64-bit or 128-bit as the key encryption length.
Key Format	Select ASCII ¹ or Hex ² to setup the key value.
Encryption Key	Enter the key according to the key format you select.

* Please click on the **Apply Changes** button or the **Reset** button to save/reset the configurations.

¹ ASCII (American Standard Code for Information Interchange) is a code for representing English letters as numbers from 0-127.

² Hexadecimal digits consist of the numbers 0-9 and the letters A-F.

2. Security Mode – WPA / WPA 2



Wireless Security Setup

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Select SSID: Root AP - RTK 11n AP Apply Changes Reset

Encryption: WPA

Authentication Mode: ☐ Enterprise (RADIUS) ☒ Personal (Pre-Shared Key)

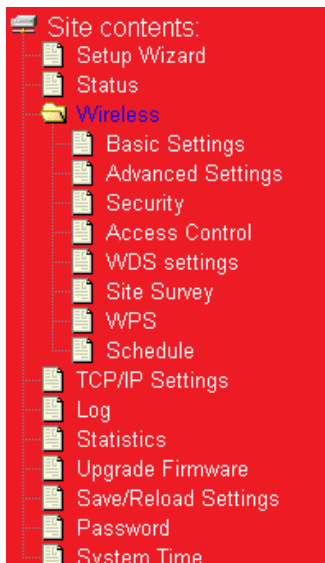
WPA Cipher Suite: ☐ TKIP ☒ AES

Pre-Shared Key Format: Passphrase

Pre-Shared Key:

Items	Information
Authentication Mode	There are two items, "Enterprise (RADIUS)" and "Personal (Pre-Shared Key)". You can select the mode by clicking the item.
WPA Cipher Suite	Select the WPA Cipher Suite to be TKIP or AES.
Pre-Shared Key Format	To decide the format, select Pass phrase or Hex in the drop list.
Pre-Shared Key	Enter the Pre-shared Key according to the pre-shared key format you select. This is the shared secret between AP and STA. This field must be filled with character longer than 8 and less than 64 lengths.(The default value is 1234567890ab)

3. Security Mode – WPA-Mixed



Wireless Security Setup

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Select SSID:

Encryption:

Authentication Mode: ☐ Enterprise (RADIUS) ☒ Personal (Pre-Shared Key)

WPA Cipher Suite: ☐ TKIP ☒ AES

WPA2 Cipher Suite: ☐ TKIP ☒ AES

Pre-Shared Key Format:

Pre-Shared Key:

Items	Information
Authentication Mode	There are two items, "Enterprise (WPA-Radius)" and "Personal (Pre-Shared Key)". You can select the mode by clicking the item.
WPA / WPA2 Cipher Suite	Select the WPA/WPA2 Cipher Suite to be TKIP or AES.
Pre-Shared Key Format	To decide the format, select Passphrase or Hex in the drop list.
Pre-Shared Key	Enter the Pre-shared Key according to the pre-shared key format you select. This field must be filled with character longer than 8 and less than 64 lengths. (The default value is 1234567890ab)

* Please click on the **Apply Changes** button or the **Reset** button to save/reset the configurations.

3.2.4 Access Control

To restrict the clients of Access authentication of Stations, set up the control list in this page.

Site contents:

- Setup Wizard
- Status
- Wireless**
 - Basic Settings
 - Advanced Settings
 - Security
 - Access Control
 - WDS settings
 - Site Survey
 - WPS
 - Schedule
- TCP/IP Settings
- Log
- Statistics
- Upgrade Firmware
- Save/Reload Settings
- Password
- System Time

Wireless Access Control

If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point.

Wireless Access Control Mode: Disable ▼

MAC Address: **Comment:**

Apply Changes
Reset

Current Access Control List:

MAC Address	Comment	Select
Delete Selected Delete All Reset		

Items	Information
Wireless Access Control Mode	Click on the drop list to choose the access control mode. You may select "Allow listed" to allow those allowed MAC addresses or select "Deny Listed" to ban those MAC addresses from accessing to this device or select "Disable".
MAC Address & Comment	Fill in the MAC address that you wish to control, and give a definition to it.
Current Access Control list	Lists the MAC Access Control Settings you have added before. Click on the list to change configuration. To Delete the station on the list, mark the check box in the select item and click the "Delete Selected". If you want to delete all stations on the list, click "Delete All" to remove all of them.

* Please click on the **Apply Changes** button or the **Reset** button to save/reset the configurations.

3.2.5 WDS Settings

When you use this device as WDS or AP+WDS mode, “WDS Setting” function can be operated. Wireless Distribution System allows the AP to communicate with other APs wirelessly. To make it work, you must ensure that these APs and the Router are in the same channel. Please add these APs MAC address and comment values into the WDS list. Don't Forget to Enable the WDS by click the check box of “Enable WDS” and press “Apply Changes” button to save. To Delete the AP on the list, Click the check box in the select item and click the “Delete Selected”. If you want to delete all APs on the list, click “Delete All” to remove all of them.

Site contents:

- Setup Wizard
- Status
- Wireless
 - Basic Settings
 - Advanced Settings
 - Security
 - Access Control
 - WDS settings
 - Site Survey
 - WPS
 - Schedule
- TCP/IP Settings
- Log
- Statistics
- Upgrade Firmware
- Save/Reload Settings
- Password
- System Time

WDS Settings

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

☐ **Enable WDS**

MAC Address:

Data Rate: Auto

Comment:

Apply Changes
Reset
Set Security
Show Statistics

Current WDS AP List:

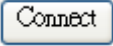
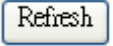
MAC Address	Tx Rate (Mbps)	Comment	Select

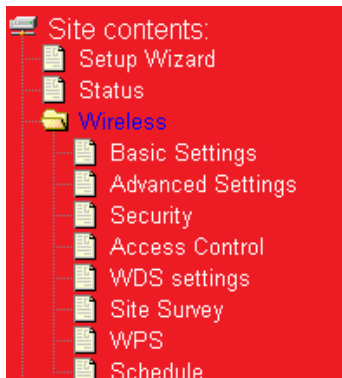
Delete Selected
Delete All
Reset

Items	Information
MAC Address & Comment	Fill in the MAC address that you wish to control, and give a definition to it.
Data Rate	The transmit limitation of data packets of this wireless AP. The wireless AP will use the highest possible selected transmission rate to transmit the data packets.
Current WDS AP List	Lists the WDS Settings you have added before. Click on the list to change configuration. To Delete the station on the list, mark the check box in the select item and click the “Delete Selected”. If you want to delete all stations on the list, click “Delete All” to remove all of them.

3.2.6 Site Survey

This page shows available wireless network information. When you use this device as a client station (STA), you may connect to other AP or Router. Select one of the lists in the site survey

table and click on  to connect to other wireless network nearby. The  button can be used to scan nearby AP again.



Wireless Site Survey

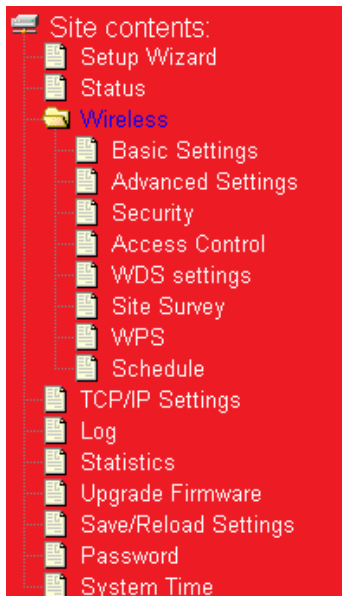
This page provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.

SSID	BSSID	Channel	Type	Encrypt	Signal
None					

3.2.7 WPS Settings

The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. This AP supports the configuration setup using PIN configuration method or PBC configuration method through an internal or external Registrar.



Wi-Fi Protected Setup

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Access Point in a minute without any hassle.

☐ Disable WPS

WPS Status:

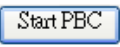
☐ Configured ☒ UnConfigured

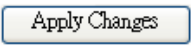


Self-PIN Number:

05180752

Push Button Configuration:



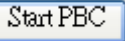




Client PIN Number:



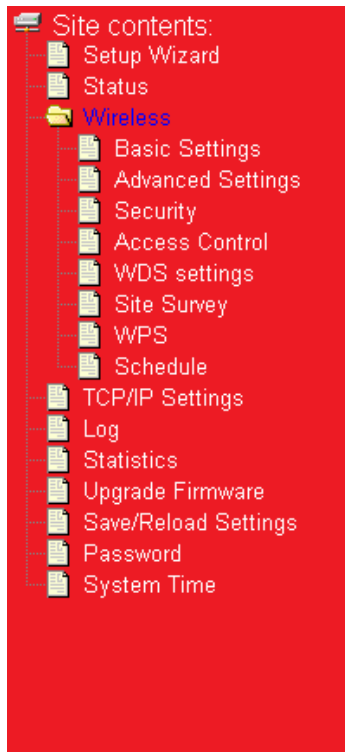
Items	Information
WPS Status	You cannot manually select the items here. The WPS Status will change from "UnConfigured" to "Configured" after you enable WPS function and setup a wireless security key for this device.
Self-PIN Number	If you use this device as a client, you can use this code when trying to connect this device to other AP by using the PIN method.
Push Button	Push Button Communication (PBC) method use a simple action of pushing a button on both the AP and the new STA to reach the function

Configuration	of easy setup WPS connection. You can simply click the  button in this GUI page. After click on the button, please run the client's WPS and push the PBC button within 2 minutes.
Client PIN Number	Personal Identification Number (PIN) method. Users have to fill in the PIN code of enrollee device and click on the  button to make communication with other AP. After click on the button, please run the client's WPS and push the PIN button within 2 minutes.

Please click on the **Apply Changes** button or the **Reset** button at the bottom to save/reset the configurations.

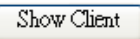
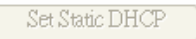
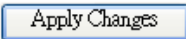
3.3 TCP/IP Setting

To set up the configuration of LAN interface, private IP of your AP LAN port and subnet mask for your LAN segment.



LAN Interface Setup

This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP addresss, subnet mask, DHCP, etc..

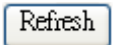
IP Address:	192.168.1.254
Subnet Mask:	255.255.255.0
Default Gateway:	0.0.0.0
DHCP:	Server 
DHCP Client Range:	192.168.1.100 - 192.168.1.200 
Static DHCP:	Disabled  
DNS Server:	
Domain Name:	
802.1d Spanning Tree:	Disabled 
Clone MAC Address:	000000000000
 	

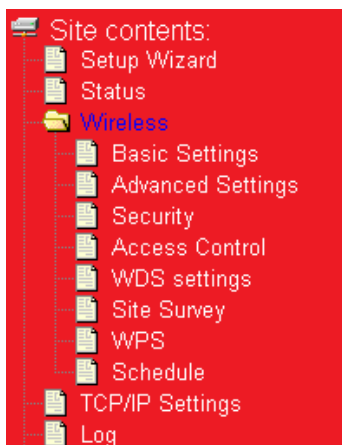
Items	Information
IP Address	The IP of your AP LAN port (default 192.168.1.254).
Subnet Mask	Subnet Mask of you LAN (default 255.255.255.0). All devices on the network must have the same subnet mask to communicate on the network.
Default Gateway	Enter the IP Address of the AP in your network.
DHCP	DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses "automatically". In this device, manual setting up your client IP is necessary when you want to use the AP as your client's default gateway.

Please click on the **Apply Changes** button or the **Reset** button
at the bottom to save/reset the configurations.

3.4 Statistics

This page allows users to get information of data transferring condition, and monitor the status and performance of this AP including receiving and sending packets. To see the latest report, click

 button.



Statistics

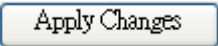
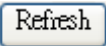
This page shows the packet counters for transmission and reception regarding to wireless and Ethernet networks.

Wireless LAN	<i>Sent Packets</i>	1183
	<i>Received Packets</i>	39110
Ethernet LAN	<i>Sent Packets</i>	831
	<i>Received Packets</i>	601



3.5 System Log

This System Log page shows the information of the current activities on the AP. To enable system log function:

1. Mark the “Enable Log” checkbox.
2. To see all information of the system, select the “system all” checkbox.
To see wireless information only, select the “wireless” checkbox.
To send the log information to a certain note, select the “Enable Remote Log” checkbox and fill in the IP address in the “Log Server IP Address” box.
3. Click the  button to activate. You could also click the  button to refresh the log information or click the  button to clean the log table.

Site contents:

Setup Wizard

Status

Wireless

Basic Settings

Advanced Settings

Security

Access Control

WDS settings

Site Survey

WPS

Schedule

TCP/IP Settings

Log

Statistics

Upgrade Firmware

Save/Reload Settings

Password

System Time

System Log

This page can be used to set remote log server and show the system log.

☐ **Enable Log**

☐ system all

☐ wireless

☐ 11s

☐ **Enable Remote Log**

Log Server IP Address:

Apply Changes

Refresh

Clear

3.6 Upgrade Firmware

Sometimes a new firmware may be issued to upgrade the system of this device. You could upgrade the firmware you got in this page. To upgrade the firmware, please click on the

button, locate the firmware in your computer and then click the button to execute.

Site contents:

- Setup Wizard
- Status
- Wireless**
 - Basic Settings
 - Advanced Settings
 - Security
 - Access Control
 - WDS settings
 - Site Survey
 - WPS
 - Schedule

Upgrade Firmware

This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.

Select File:

3.7 Save/Reload Setting

The Save/Reload Setting page allows users to backup and download the configuration status of the device or restore the factory default configuration.

Site contents:

- Setup Wizard
- Status
- Wireless**
 - Basic Settings
 - Advanced Settings
 - Security
 - Access Control
 - WDS settings
 - Site Survey
 - WPS

Save/Reload Settings

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.

Save Settings to File:

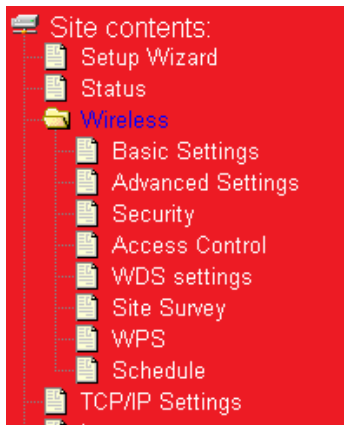
Load Settings from File:

Reset Settings to Default:

Items	Information
Save Settings to File	Click on the Save... button to save the currently configure settings.
Load Settings from File	Click Browse... to select the file that you save, and then click Upload to start the process. Please wait for it to complete.
Reset Settings to Default	Click Reset to start the process and it will be completed till the status LED starts blinking.

3.8 Password

To set up the Administrator Account information, enter the Username, New password, and reenter the password on the text box. Don't forget to click the to save the configuration.



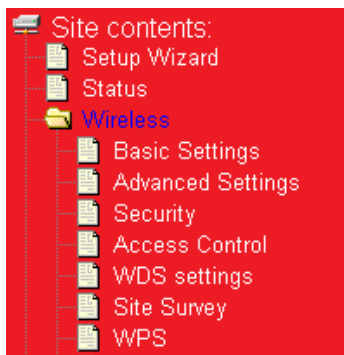
Password Setup

This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection.

User Name:	
New Password:	
Confirmed Password:	
Apply Changes Reset	

3.9 System Time Setting

This page allows users to configure the time of the AP. To specify manually, fill in the blanks in "Current Time" or select "Copy Computer Time". Click the "Apply Change" button after your configuration.



System Time Setting

This page allows you setup the current system time.

Current Time :	Yr 2010 Mon 3 Day 26 Hr 10 Mn 14 Sec 55
Copy Computer Time	
Apply Change Refresh	

Appendix A: Product Specifications

Standard	IEEE 802.11n draft 2.0, IEEE 802.11g, IEEE 802.11b, IEEE 802.3, IEEE 802.3u
Interface	LAN: 2 ports 10/100 Mbps Ethernet, RJ-45 1* fixed antenna (Standard 2 dB) 1* reset to factory default button 1* WPS button
Antenna	Antenna type: Dipole Antenna connector type: Fixed
Cable Connections	RJ-45 (10BASE-T): Category 3,4,5 UTP RJ-45 (100BASE-TX): Category 5 UTP
Transmission Mode	Auto-Negotiation (Full-duplex, Half-duplex)
Security	64/128-bit WEP, WPA, WPA2
Network Data Rate	802.11b: 1,2,5.5, and 11Mbps 802.11g: 6,9,12,18,24,36,48 and 54Mbps 802.11n: up to 300 Mbps
Receiver Sensitivity	802.11n Typical -68 dBm 802.11g Typical -73 dBm 802.11b Typical -84 dBm
Transmit Power	16dBm typically @ 802.11b 14dBm typically @ 802.11g 13dBm typically @ 802.11n
LED indications	1*PWR, 1*SYS, 2*LAN, 1*WLAN
Power Supply	External Power Adapter, 5V/ 1A
Channel	Europe 13
Range Coverage	Indoor 35~100 meters : Outdoor 100~300 meters.
Temperature	Operating: 0°C ~ 40°C (32°~104°F) Storage: -10°C ~ 70°C (14°~158°F)
Humidity	Operating: 10% ~ 90% RH, non-condensing Storage: 5%~90% RH, non-condensing



LONGSHINE Technologie (Europe) GmbH

Post Address: P.O.Box 1460

D-22 904 Ahrensburg

Tel: ++49-(0)-4102-4922-0

House Address: An der Strusbek 9

D-22 926 Ahrensburg

Fax: ++49-(0)-4102-40109

WEB: <http://www.longshine.de>

E-MAIL: sales@longshine.de

DECLARATION OF CONFORMITY IN ACCORDANCE WITH THE RADIO AND TELECOMMUNICATIONS TERMINAL EQUIPMENT ACT (FTEG) AND DIRECTIVE 1999/5/EC (R & TTE DIRECTIVE)



= European Community Conformity Mark

We, Manufacturer/Importer

Longshine Technologie (Europe) GmbH
An der Strusbek 9
22926 Ahrensburg
Germany

Declare, That The Product

LCS-WA3-50
Wireless 802.11b/g/n Access Point

Is In Conformity With:

Standards	Results
EN 300328 V1.7.1 (2006-10)	Pass
EN 301489-1 V1.8.1 (2008-04)	Pass
EN 301489-17 V1.3.2 (2008-04)	Pass
EN 55022:2006+A1:2007	Pass
EN 61000-4-2:2009	Pass
EN 61000-4-3:2006+A1:2008	Pass
EN 50371:2002	Pass
EN 60950-1:2006+A11:2009	Pass

Identification of signatory empowered to bind the manufacturer or his authorized representative.

Signature
Manufacturer/Importer

Date: 13.04.2010

Geschäftsführer:
Dr. Rong-Jye Lu
Dresdner Bank
BLZ 200 800 00, Kto.-Nr. 721 137 500
IBAN: DE34200800000721137500
SWIFT BIC:DRES DE FF

USt-IdNr.:
DE151364101
Steuer Nr.:
3029208798

Registergericht:
Ahrensburg HR B 3135